# Work Order ID 120510

*120510*

*Wednesday, June 04, 2014 3:07:13 PM*



**Item ID:** D4635-3 **Accept** *N900040100* **Setup Start** *NS1*

**Revision ID:** **Stop** *NS2*

**Item Name:** Aft Ceiling Panel, LH

**Start Date:** 6/11/14 **Start Qty:** 1.00 *1*

**Required Date:** 6/11/14 **Req'd Qty:** 1.00 *1*

**Reference:**

**Cust Item ID:**

**Customer:**

**Run Start** *NR1*

**Stop** *NR2*

**Approvals:** **Process Plan:** MC5 **Date:** 14-06-09 **Tooling:** _____ **Date:** _____

**QC:** _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____

| Draw Nbr | Revision Nbr |
|---|---|
| D4635 | E |

| Sequence ID/ Work Center ID | Operation Description | Set Up/ Run Hours | Tool ID | Tool # | Plan Code | Accept Qty | Reject Qty | Reject Number | Insp. Stamp |
|---|---|---|---|---|---|---|---|---|---|
| 100 | | 0.00 | | | | | | | DAS 07 9-89 |
| *100* | HAND FINISHING THERMOFORMING | | | | | | | | |
| Thermoform | **Memo** | 0.00 | | | | X | | | 14/06/18 |
| Thermoforming Machine | Cut Blanks | | | | | | | | |
| 105 | | 0.00 | | | | | | | DAS 07 9-89 |
| *105* | Dry Material | | | | | | | | |
| HandThermo | **Memo** | 0.00 | | | | X | | | 14/06/18 |
| Hand Finishing Thermoforming | Dry Sheet as per QSI022 POLYCARBONATE | | | | | | | | |

Temp: 245 deg. F JUN 18 2014

Time IN: 5:00 PM

Time OUT: 6:00 AM Per.....

DQA: _____ Date: _____

# WORK ORDER NON-CONFORMANCE / UPDATE

DART AEROSPACE

QA Closed: Date: Work Order update only ☐

Work Order: _____

Part No. _____

NCR No. _____

**DISPOSITION**

Rework ☐
Scrap ☐
Use-as-is ☐
Suspected Unapproved ☐

**AGAINST DEPARTMENT/PROCESS**

Skid-tube ☐ Crosstube ☐ Water Jet ☐ Engineering ☐
Machining ☐ Small Fab ☐ Prod. Eng. Coor. ☐ Quality ☐
Thermoforming ☐ Finishing ☐ Rec/Store/Packaging ☐ Other ☐
Large Fab ☐ Composite ☐ Supplier ☐ ☐

| Root Cause | | Date | Step | Qty | Description of work order update or non-conformance | Initial Chief Eng | Action Description | Sign & Date | Verification | QC Inspector |
|---|---|---|---|---|---|---|---|---|---|---|
| Design | ☐ | | | | | | | | | |
| Doc/Data | ☐ | | | | | | | | | |
| Equip/Tooling | ☐ | | | | | | | | | |
| Handling/Pre | ☐ | | | | | | | | | |
| Material | ☐ | | | | | | | | | |
| Operator | ☐ | | | | | | | | | |
| Offset/Setup | ☐ | | | | | | | | | |
| Process | ☐ | | | | | | | | | |
| Supplier | ☐ | | | | | | | | | |
| Training | ☐ | | | | | | | | | |
| Transport | ☐ | | | | | | | | | |
| Unapproved | ☐ | | | | | | | | | |

**FAULT CATEGORY**

**Landing Gear**

☐ Bending
☐ Centre Not Concentric
☐ Cracks
☐ Crimp/Kink/Ripple/Wave
☐ Cuffs
☐ Crushing
☐ Heat Treat
☐ Inspection Strip in Tube
☐ Marks/Chatter
☐ Turning Sequence
☐ Wave/Twist in Tube

**General**

☐ Bend
☐ BOM/Route
☐ Broken/Damage/Defect
☐ Burrs
☐ Contamination
☐ Countersink
☐ Cut Too Short
☐ Drawing
☐ Drill Holes
☐ Finish
☐ Fit/Function
☐ Folio/Program
☐ Grain
☐ Hardware
☐ Inspection Incomplete/Unqualified
☐ Instructions Incomplete/Unclear
☐ Misaligned/off center
☐ Mislabeled
☐ Misread
☐ Off-set
☐ Out of Calibration
☐ Out of Sequence
☐ Outside Dimensions
☐ Over/Under tolerance
☐ Part Incorrect
☐ Part Lost/Missing
☐ Part Moved
☐ Positioned Wrong
☐ Power Loss/Surge
☐ Pressure/Forced
☐ Set-up
☐ Temperature/Cure
☐ Weld
☐ Wrong Stock Pulled
☐ Other

**Item ID:** D4635-3 **Accept** *N900040100* **Setup Start** *NS1*
**Revision ID:** **Stop** *NS2*
**Item Name:** Aft Ceiling Panel, LH
**Start Date:** 6/11/14 **Start Qty:** 1.00 *1*
**Required Date:** 6/11/14 **Req'd Qty:** 1.00 *1*
**Reference:** **Cust Item ID:** **Customer:**

**Approvals:** **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____
**QC:** _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____

**Run Start** *NR1*
**Stop** *NR2*

| Sequence ID/ Work Center ID | Operation Description | Set Up/ Run Hours | Tool ID | Tool # | Plan Code | Accept Qty | Reject Qty | Reject Number | Insp. Stamp |
|---|---|---|---|---|---|---|---|---|---|
| 110 | | 0.00 | | | | | | | |
| *110* | THERMOFORMING MACHINE | | | | | | | | |
| Thermoform | **Memo** | 0.00 | | | | 1 | | | BB 14/06/18 |
| Thermoforming Machine | Thermoform as per Dwg. D4635-3 and Folio FTA149 | | | | | | | | |
| | Dwg. Rev. E | | | | | | | | |
| | Folio Rev. B D DK | | | | | | | | |
| | NOTE: Check moulds prior to using to ensure proper placement of add-ons. Visually inspect for proper formation and texture | | | | | | | | |
| 130 | | 0.00 | | | | | | | |
| *130* | HAND FINISHING THERMOFORMING | | | | | | | | |
| Thermoform | **Memo** | 0.00 | | | | (1) | | | SAD 14/07/03 |
| Thermoforming Machine | Trim to Finished Dimensions | | | | | | | | |

DQA: _____ Date: _____

DART AEROSPACE

# WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: Date: Work Order update only ☐

Work Order: _____

Part No. _____

NCR No. _____

**DISPOSITION**

Rework ☐
Scrap ☐
Use-as-is ☐
Suspected Unapproved ☐

**AGAINST DEPARTMENT/PROCESS**

Skid-tube ☐ Crosstube ☐ Water Jet ☐ Engineering ☐
Machining ☐ Small Fab ☐ Prod. Eng. Coor. ☐ Quality ☐
Thermoforming ☐ Finishing ☐ Rec/Store/Packaging ☐ Other ☐
Large Fab ☐ Composite ☐ Supplier ☐ ☐

| Root Cause | | Date | Step | Qty | Description of work order update or non-conformance | Initial Chief Eng | Action Description | Sign & Date | Verification | QC Inspector |
|---|---|---|---|---|---|---|---|---|---|---|
| Design | ☐ | | | | | | | | | |
| Doc/Data | ☐ | | | | | | | | | |
| Equip/Tooling | ☐ | | | | | | | | | |
| Handling/Pre | ☐ | | | | | | | | | |
| Material | ☐ | | | | | | | | | |
| Operator | ☐ | | | | | | | | | |
| Offset/Setup | ☐ | | | | | | | | | |
| Process | ☐ | | | | | | | | | |
| Supplier | ☐ | | | | | | | | | |
| Training | ☐ | | | | | | | | | |
| Transport | ☐ | | | | | | | | | |
| Unapproved | ☐ | | | | | | | | | |

**FAULT CATEGORY**

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☐ Inspection Strip in Tube
☐ Marks/Chatter
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**General**

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☐ Countersink
☐ Cut Too Short
☐ Drawing
☐ Drill Holes
☐ Finish
☐ Fit/Function

☐ Folio/Program
☐ Grain
☐ Hardware
☐ Inspection Incomplete/Unqualified
☐ Instructions Incomplete/Unclear
☐ Misaligned/off center
☐ Mislabeled
☐ Misread
☐ Off-set
☐ Out of Calibration
☐ Out of Sequence

☐ Outside Dimensions
☐ Over/Under tolerance
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☐ Part Lost/Missing
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☐ Pressure/Forced
☐ Set-up
☐ Temperature/Cure
☐ Weld
☐ Wrong Stock Pulled

☐ Other

_____
_____
_____

**Item ID:** D4635-3 **Accept** *N900040100* **Setup Start** *NS1*
**Revision ID:** **Stop** *NS2*
**Item Name:** Aft Ceiling Panel, LH
**Start Date:** 6/11/14 **Start Qty:** 1.00 *1*
**Required Date:** 6/11/14 **Req'd Qty:** 1.00 *1*
**Reference:**
**Cust Item ID:**
**Customer:**

**Run Start** *NR1*
**Stop** *NR2*

**Approvals:** **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____
**QC:** _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____

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|---|---|---|---|---|---|---|---|---|---|
| 140 | QC6- Inspect dimensions to drawing | 0.00 | | | | | | | |
| *140* | Dimensional Inspection | | | | | | | | |
| QC | **Memo** | 0.00 | | | | | | | |
| Quality Control | Fill out Inspection Sheet Rev A | | | | | | | | |
| QS → 14/07/07 | | | DAS 27 9-89 | | | 1 | | | |
| 160 | | 0.00 | | | | | | | |
| *160* | Packaging | | | | | | | | |
| Packaging | **Memo** | 0.00 | | | | | | | |
| Packaging | Section MF | | | | | | | | |
| 170 | QC21- Final Inspection - Work Order Release | 0.00 | | | | | | | |
| *170* | | | | | | | | | |
| QC | **Memo** | 0.00 | | | | | | | |
| Quality Control | | | | | | | | | |

1 SAO 14/07/07

1 SAO 14/07/07

MLO 14-07-08

14-7-8

DQA: _____ Date: _____

# WORK ORDER NON-CONFORMANCE / UPDATE

DART AEROSPACE

QA Closed: Date: Work Order update only ☐

Work Order: _____

Part No. _____

NCR No. _____

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| Doc/Data | ☐ | | | | | | | | | |
| Equip/Tooling | ☐ | | | | | | | | | |
| Handling/Pre | ☐ | | | | | | | | | |
| Material | ☐ | | | | | | | | | |
| Operator | ☐ | | | | | | | | | |
| Offset/Setup | ☐ | | | | | | | | | |
| Process | ☐ | | | | | | | | | |
| Supplier | ☐ | | | | | | | | | |
| Training | ☐ | | | | | | | | | |
| Transport | ☐ | | | | | | | | | |
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☐ Finish
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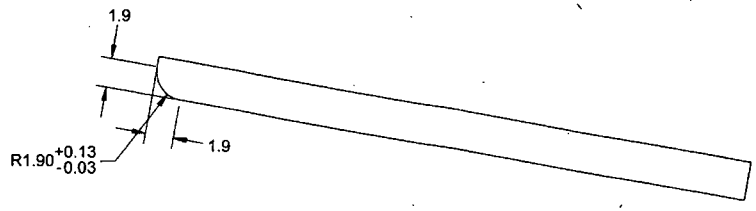
☐ Folio/Program
☐ Grain
☐ Hardware
☐ Inspection Incomplete/Unqualified
☐ Instructions Incomplete/Unclear
☐ Misaligned/off center
☐ Mislabeled
☐ Misread
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☐ Part Lost/Missing
☐ Part Moved
☐ Positioned Wrong
☐ Power Loss/Surge

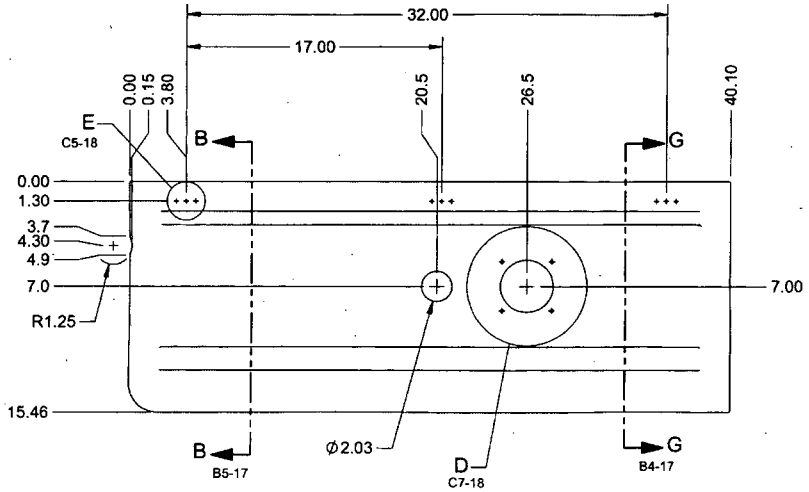
☐ Pressure/Forced
☐ Set-up
☐ Temperature/Cure
☐ Weld
☐ Wrong Stock Pulled

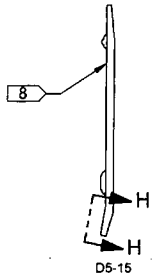
☐ Other

_____
_____
_____




**SECTION H-H** B2-15




SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 120516 MCJ
14-06-09

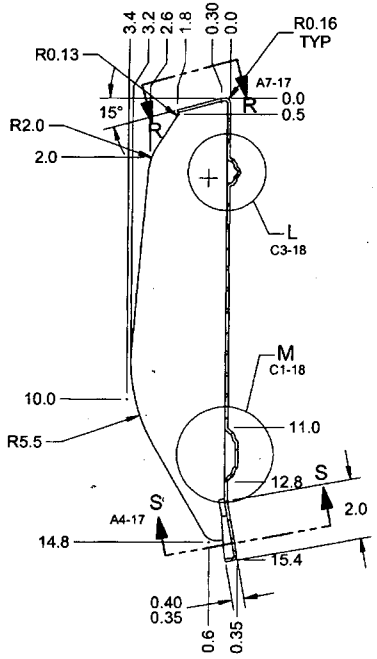
RELEASED
2014 -01- 22

NOTES:
1) MATERIAL: F6006 SUEDE/POLISHED GY5B133 LIGHT GREY LEXAN SHEET 0.093 THICK
(REF DART SPEC MLEXS.093-F6006-07)
2) FINISH: N/A
3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
4) UNITS: INCHES UNLESS OTHERWISE NOTED
5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
6) IDENTIFICATION: N/A
7) WEIGHT: 2.66 lbs
8) TEXTURE ON THIS SIDE
9) TRIM D4635-3 PER TOOL DT9841
10) THERMOFORM D4635-3 PER QSI 022 USING DT9849 TOOL
MIN. THICKNESS AFTER FORMING:
RIDGES/EDGES = 0.060
ELSEWHERE = 0.070

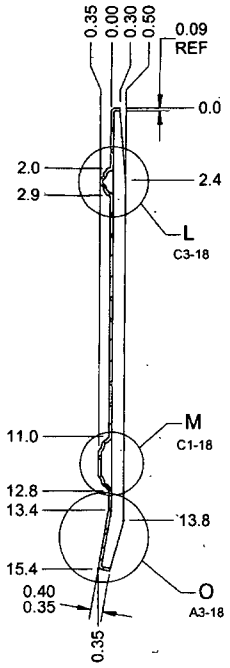
**D4635-3 LH, AFT CEILING PANEL**

| | | |
|---|---|---|
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| DRAWN | RF | DRAWING NO. D4635 REV. E |
| CHECKED | | SHEET 15 OF 18 |
| MFG. APPR. | | TITLE OUTBOARD CEILING PANELS |
| APPROVED | | SCALE NTS |
| DE APPR. | | |
| DATE | 14.01.09 | |

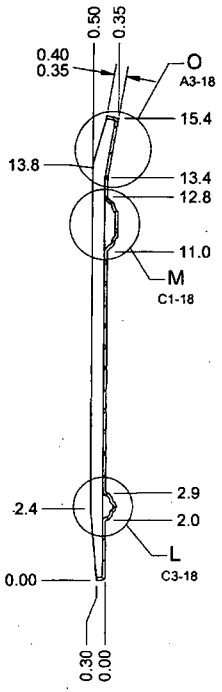
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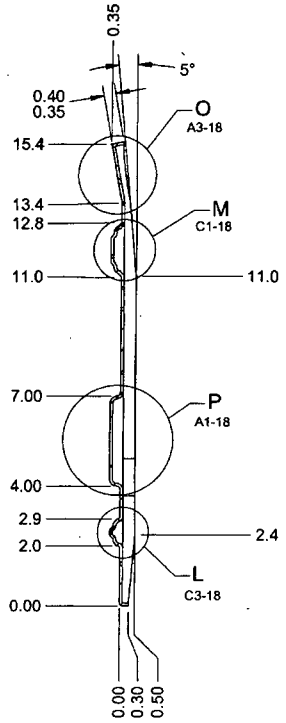

**SECTION A-A**
**SECTION A'-A' OPPOSITE** B3-13 B3-14
**SCALE 2X**



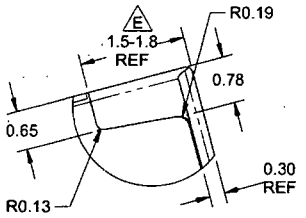

**SECTION B-B** B7-13 B7-14
**SCALE 2X**



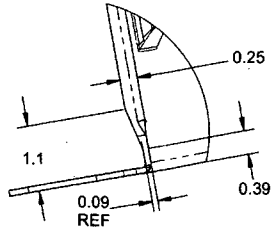

**SECTION G-G** B4-15 B4-16
**SCALE 2X**




**SECTION K-K** C6-16
**SCALE 2X**




**AUXILIARY VIEW R-R** D7-17
**SECTION R'-R' OPPOSITE**
**SCALE 2X**

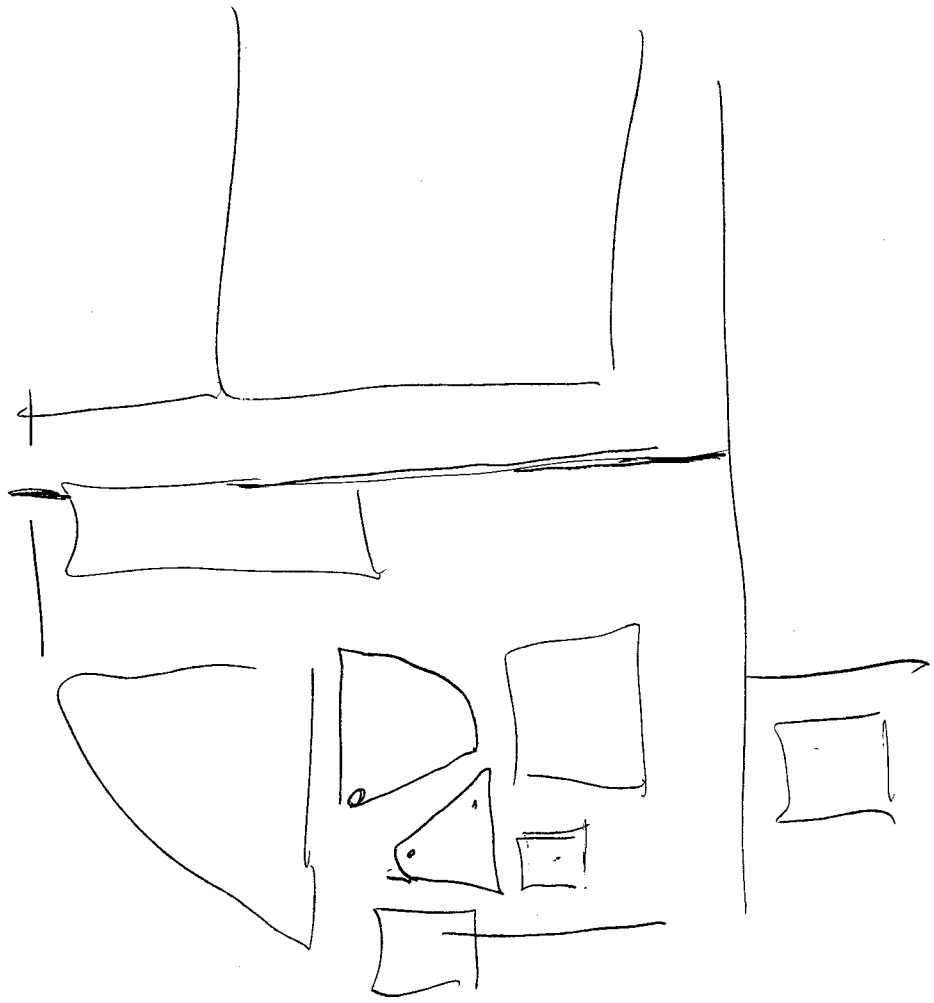


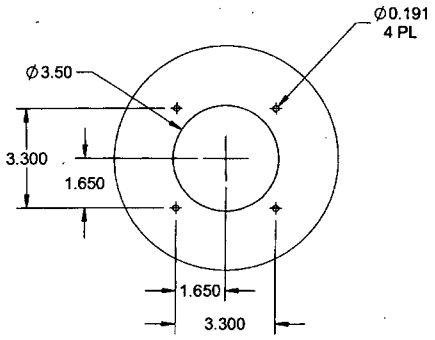

**AUXILIARY VIEW S-S** B7-17
**SECTION S'-S' OPPOSITE**
**SCALE 2X**

RELEASED
2014 -03- 22

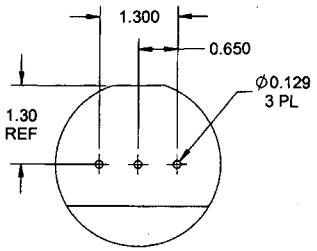
| | | |
|---|---|---|
| DESIGN | RF | **DART AEROSPACE LTD** HAWKESBURY, ONTARIO, CANADA |
| DRAWN | RF | |
| CHECKED | BC | DRAWING NO. D4635 REV. E |
| MFG. APPR. | | SHEET 17 OF 18 |
| APPROVED | | TITLE OUTBOARD CEILING PANELS SCALE NTS |
| DE APPR. | | |
| DATE | 14.01.09 | |

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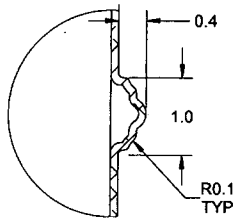




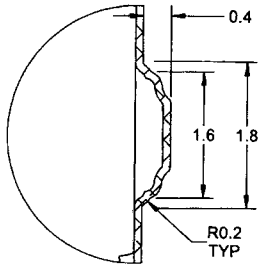

**DETAIL D** B4-13 B3-14 B5-15 B5-16
**SCALE 2X**



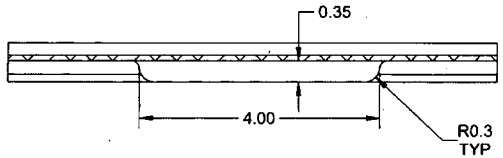

**DETAIL E** C7-13 B6-14 C6-15 B5-16
**SCALE 4X**



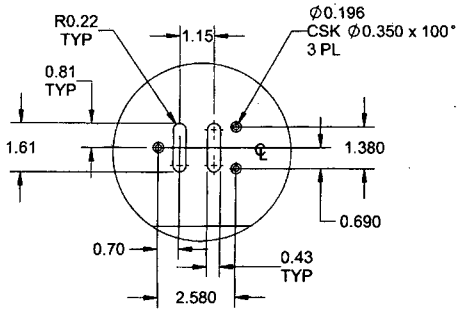

**DETAIL L** B2-17 B4-17 C5-17 C7-17
**SCALE 1.5X**



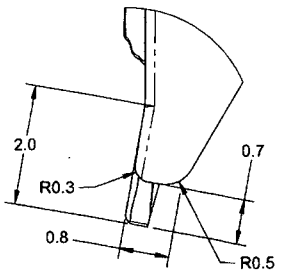

**DETAIL M** C2-17 C3-17 C5-17 C7-17
**SCALE 1.5X**



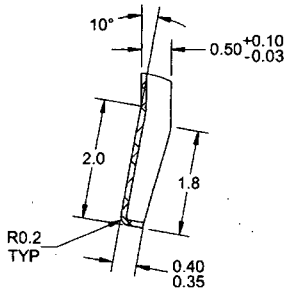

**SECTION I-I** B5-16
**SCALE 4X**



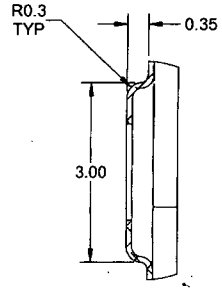

**DETAIL Q** C5-16
**SCALE 2X**




**DETAIL N** B2-13
**SCALE 2X**




**DETAIL O** D2-17 D3-17 B5-17
**SCALE 2X**




**DETAIL P** C2-17
**SCALE 4X**

RELEASED
2014 -01- 22

| | | |
|---|---|---|
| DESIGN | RF | **DART AEROSPACE LTD** HAWKESBURY, ONTARIO, CANADA |
| DRAWN | RF | |
| CHECKED | | DRAWING NO. REV. E |
| MFG. APPR. | | D4635 SHEET 18 OF 18 |
| APPROVED | | TITLE SCALE |
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| DATE | 14.01.09 | |

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# DART AEROSPACE LTD

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|---|---|---|---|
| Description: Aft Ceiling Panel LH | | Work Order: | 120510 |
| Inspection Drawing: 4635-3 | Rev: E | Part Number: | D4635-3 |

## INSPECTION SHEET

| Drawing Dimension | Tolerance | Actual Dimension | Accept | Reject | Method of Inspection | Comments |
|---|---|---|---|---|---|---|
| 3.80 | +/- 0.030 | 3.80 | ✓ | | Vern | SEAB-08 |
| 17.00 | +/- 0.030 | 17.00 | ✓ | | M-T | SEAB-21 |
| 32.00 | +/- 0.030 | 32.00 | ✓ | | " | |
| 20.5 | +/- 0.100 | 20.5 | ✓ | | " | |
| 26.5 | +/- 0.100 | 26.5 | ✓ | | " | |
| 7.0 | +/- 0.100 | 7.0 | ✓ | | " | |
| 7.00 | +/- 0.030 | 7.00 | ✓ | | " | |
| Ø2.03 | +/- 0.012 -0.000 | Ø2.03 | ✓ | | Vern | SEAB-08 |
| 3.300 | +/- 0.010 | 3.300 | ✓ | | | |
| 1.650 | +/- 0.010 | 1.650 | ✓ | | | |
| 3.300 | +/- 0.010 | 3.300 | ✓ | | | |
| 1.650 | +/- 0.010 | 1.650 | ✓ | | | |
| Ø0.191 | +0.005 -0.000 | Ø0.191 | ✓ | | | |
| 1.300 | +/- 0.010 | 1.300 | ✓ | | | |
| 0.650 | +/- 0.010 | 0.650 | ✓ | | | |
| Ø0.129 | +0.005 -0.000 | Ø0.129 | ✓ | | | |

| | | | |
|---|---|---|---|
| Measured by: SAD | Checked By: DAS 27 9-89 | QC inspector: ~~DAS~~ 27 9-89 | Engineering Approval (*if necessary*): |
| Date 14/07/07 | Date 14/07/07 | Date 14/7/7 | Date |